Atlas Minerals
Division of Atlas Corporation
Post Office Box 1207
Moab, Utah 84532-1207
Phone (801) 259-5131

September 5, 1984

CERTIFIED # P 505 254 275

Mr. Thomas N. Tetting
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

RE: Roosevelt Mine
Condition No. 2
Mined Land Reclamation Contract

Dear Mr. Tetting:

Enclosed please find a copy of our required report regarding soils and vegetation at the Roosevelt Mine which is dated July 12, 1984 and the follow-up letter dated July 16, 1984. Both letters were addressed to Mr. James W. Smith, Jr. of the Division of Oil, Gas and Mining. You should be able to contact him with regard to the photographs we had enclosed.

Please contact my office if you should have further questions.

Sincerely,

Richard E. Blubaugh

Richard E. Blubaugh
Regulatory Affairs Manager

Encl

REB/jl

Atlas Minerals
Division of Atlas Corporation
Post Office Box 1207
Moab, Utah 84532-1207
Phone (801) 259-5131

July 12, 1984

Mr. James W. Smith, Jr.
Division of Oil, Gas and Mining
4241 State Office Building
Salt Lake City, Utah 84114

Re: Reclamation Contract Condition #2
Soils and Vegetation at Roosevelt Mine

Dear Mr. Smith:

As agreed during our meeting of November 30, 1983 and confirmed in my letter of January 19, 1984, I am herein providing the additional information requested on the Colorado site named the Roosevelt Mine.

Enclosed is a photocopy of the results obtained from a composite soil sample of the top twelve inches of material at the site. All the parameters shown on the draft sampling guideline were determined by the recommended methods. This work was performed by CORE Laboratories, Inc., Casper, Wyoming.

Table I compares the common parameters found in Table 4-3(p.35) of the MK report, "Methodology for Reclamation/Revegetation of Uranium Mined Lands in Utah and Colorado, September, 1983".

TABLE I

Soil Comparison: Roosevelt/MK Report

Parameter	MKReport Average	MKReport Range	Roosevelt
pH	8.06	7.8 - 8.6	7.67
Conductivity(mmhos/cm)	5.8	.38 - 11.8	2.60
Soluble Na(meg/l)	34.6	11.6 - 98.8	8.7
Soluble Ca(meg/l)	26.2	4.1 -113	23.0
Soluble Mg(meg/l)	>		4.5 > 27.5
SAR	14.8	2.9 - 43	2.5
Carbonates (lime)	+	+ - ++	+ (6.24)
Soluble K (ppm)	166.2	81 -320	27.4 (.7 meg/R)
Nitrate (ppm)	153.2	6.8 -401	3.6
Phosphorus (ppm)	2.4	.8 - 9.0	5.3
Texture Classification	Non typical Appears to be sandy loom		Sandy loom

The results indicate some basic similarities with the soils shown in the MK report. They also show some notable dissimilarities. The similarities include: pH, conductivity, calcium and magnesium content, lime content, phosphorus content, and texture classification. The dissimilarities are sodium content, SAR, and the concentrations of the nutrients available from potassium and nitrate. With the exceptions of sodium and SAR values, the basic nature of the soils appear to be relatively similar in nature to the soils of the other mines included in the MK report. These differences would tend to indicate that the Roosevelt soils would be somewhat more amenable to successful revegetation. However, the substantially lower concentrations of potassium and nitrates offset the advantage offered by less sodic soil conditions making definite conclusions difficult to determine. These findings appear to further substantiate the following statement made by MK in their report.

> " The tremendous diversity of geologic materials makes it seem unlikely that a particular formation would have uniform properties affecting revegetation". (p.36)

It should be noted that a comparison of the Roosevelt data with those soils shown as being derived from the Saltwash formation in the pinyon-juniper vegetation group (i.e., October, Pandora and Rim Columbus) indicates less difference between the SAR and Na values. For example, the average SAR value for these mines is 6.7 compared to 2.5 for the Roosevelt. And the average Na value is 21.6 compared to 8.7 for the Roosevelt. The big differences continue to be the potassium and nitrates, although these differences are also lessened when comparing only the saltwash mines.

As shown by the soil results, the Roosevelt site has alkaline soils with less than adequate nutrient levels. These conditions are similar to many of the sites in Utah.

The MK report categorizes the Roosevelt site along with Atlas' other mines in Table 3.1, pp. 21 and 22. The elevation at the Roosevelt is just under 6000 feet. The majority of Atlas' Utah mines are between 6000 and 7000 feet. Rainfall at the Roosevelt ranges from 11 to 14 inches per year. This is quite similar to the range of 12 to 16 inches shown for the majority of the Utah mines. Most of the Utah mines are in the upper pinyon-juniper vegetation group, although a few are in the lower pinyon-juniper vegetation group which is the vegetation group found at the Roosevelt. Thus the topographic and biological conditions are also relatively similar.

On May 27, 1984, I visited the reclaimed Roosevelt mine site. Due to other pressing priorities I have not been able to return for a second evaluation of vegetation growth. My observations at that time are shown below. Photographs were taken which I intended to include with this report. However, due to unexpected delays from the photo lab, duplicate photographs are not available at this time. They will be forwarded under separate cover when we receive them.

Atlas Minerals
Division of Atlas Corporation

SHEET 3 DATE 7/12/84 TO James W. Smith

Stability: Surface erosion was minimal or absent on all sloped areas. Some minor erosion was noted in the main drainage through the property.

Vegetation: Species diversity was observed with at least four species readily apparent, two of which were more dominant than the others.

Cover: My visual estimate of new cover was approximately 50% of the surrounding native cover. There was evidence that cattle grazing had occurred in the area.

I trust this report satisfies the request for additional information made by the Division relative to Condition No. 2 of the Mined Land Reclamation Contract. An annual report on ground cover will be submitted again in July 1985. Please call at your convenience if you have any questions.

Sincerely,

Richard E. Blubaugh

Richard E. Blubaugh
Regulatory Affairs Manager

cc: R. Lewis
R. Dye

REB/jl

CORE LABORATORIES, INC.
ANALYTICAL REPORT

CLIENT IDENTIFICATION

Roosevelt Mine, CO

JOB NO.:6303-S04028
COMPANY: ATLAS MINERALS
JOB/GROUP REMARKS:

	IDENTIFICATION	IDENTIFICATION
1)	5-27-84	

CORE LABORATORIES, INC.
ANALYTICAL REPORT

Job No.:S84028
Chemist:CR
Location:6406-19

SOIL ANALYSIS REPORT

Sample Number	1									
pH, units	7.67									
Conductivity, mmho/cm	2.60									
Saturation, %	33.44									
Soluble Na, meq/l	8.7									
Soluble Ca, meq/l	23.0									
Soluble Mg, meq/l	4.5									
SAR	2.5									
Selenium, ppm										
Boron, ppm										
Carbonates, % (as $CaCO_3$)	6.24									
Organic Carbon, %	0.23									
Total N, %	0.023									
Soluble Potassium, meq/l	0.7									
Nitrate, ppm	3.6									
Phosphorus, ppm	5.3									
Exchangeable Sodium, %										
*Cation Exchange Capacity	5.17									

*meq/100 grams

CORE LABORATORIES, INC.
ANALYTICAL REPORT

Job No.:
Chemist:
Location:

TEXTURE ANALYSIS REPORT

Sample Number	Interval	% Sand	% Silt	% Clay	Texture Classification
1		66	16	18	SANDY LOAM

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July 16, 1984

Mr. James Smith, Jr.
Division of Oil, Gas & Mining
4241 State Office Building
Salt Lake City, Utah 84114

RE: Roosevelt Mine
Condition No. 2
Mined Land Reclamation Contract

Dear Mr. Smith:

Enclosed please find the photographs referenced in my report to you of July 12, 1984. Also, enclosed is a brief explanation of the photographs, which were taken May 26, 1984 at the reclaimed Roosevelt mine site.

Sincerely,

Richard E. Blubaugh

Richard E. Blubaugh
Regulatory Affairs Manager

Encl.

REB/jl

ATLAS MINERALS

ROOSEVELT MINE

PHOTOGRAPH EXPLANATION

Photo No.	Explanation
1	Major drainage of site - looking towards reclaimed portal.
2	Overview of reclaimed mine site. Old portal in upper left.
3	Portion of reclaimed contrasted with native area.
4	Reclaimed area just west of main area shown in No.2.
5	Close-up of new vegetation - typical of denser growth.
6	Similar to No. 5
7	Close-up of new vegetation - typical of sparser growth.
8	Existing native vegetation - typical of denser growth - adjacent to west side of site.
9	Existing native vegetation - typical of sparser growth.
10	Natural revegetation on old mine rock.

Note: Photographs were taken by R. E. Blubaugh May 26, 1984.